

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Dr. Christoph Charton et al.

Group Art Unit: 1795

Appn. No. : 10/597,625

(National Stage of PCT/EP2004/013258)

I.A. Filed : November 23, 2004

Examiner: McDonald

Confirmation No. 3976

For : METHOD FOR THE PRODUCTION OF AN ULTRA BARRIER LAYER SYSTEM

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Service Window, Mail Stop Appeal Brief-Patents
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir :

This appeal is under 35 U.S.C. 134 from the decision of the Examiner finally rejecting claims 1-27 as forth in the Final Office Action dated July 23, 2010.

A Notice of Appeal to the July 23, 2010 Final Office Action has been filed on October 25, 2010 (October 23, 2010 being a Saturday) so that the time for filing an Appeal Brief extends until December 27, 2010 (December 25, 2010 being a Saturday).

Appellant notes that this Appeal Brief is being filed by December 27, 2010 so that an extension of time and the fee associated therewith should not be necessary for maintaining the pendency of the application. However, if for any reason any extension of time and/or any fee is necessary to maintain the pendency of the application, including any extension of time and/or any appeal fee, this is an express request for any required extension of time and authorization to charge any necessary fee to Deposit Account No. 19-0089.

The requisite fee under 37 C.F.R. 41.20(b)(2) in the amount of \$540.00 for the filing of the Appeal Brief is being paid herewith.

As noted above, if for any reason any extension of time and/or any fee is required to maintain the pendency of the application, including any extension of time and/or appeal fee, authorization is hereby provided to charge any required fee, including any fee for the Appeal Brief and any necessary extension of time fee to Deposit Account No. 19-0089.

(I) REAL PARTY IN INTEREST

The real party in interest is Fraunhofer-Gesellschaft Zur Foerderung Der Angewandten Forschung E.V. by an assignment from the inventors to recorded August 2, 2006, at Reel 018042, Frame 0273 (8 pages).

(II) RELATED APPEALS AND INTERFERENCES

None

There are no pending related appeals and/or interferences.

(III) STATUS OF CLAIMS

The status of the claims is as follows:

Claims 1-27 are pending in this application and are under appeal.

Of the pending claims, claims 1-27 have been finally rejected in the Final Office Action dated July 23, 2010, and are under appeal.

(IV) STATUS OF AMENDMENTS

The appeal is based upon finally rejected claims.

An amendment of the claims has not been filed after the mailing of the Final Office Action dated July 23, 2010. However, a response to the Final Office Action was filed September 13, 2010, and an Advisory Action was mailed October 20, 2010 maintaining the rejection of record for the reasons set forth in the final rejection.

(V) SUMMARY OF THE CLAIMED SUBJECT MATTER

The following description is made with respect to the independent claim and includes references to particular parts of the specification. As such, the following is merely exemplary and is not a surrender of other aspects of the present invention that are also enabled by the present specification and that are directed to equivalent methods within the scope of the claims.

Independent Claim 1

Independent claim 1 recites a method for producing an ultrabarrier layer system (e.g., page 1, lines 20-25; page 7, lines 17-23) comprising vacuum coating on a substrate a layer stack comprising an alternating layer system of at least one smoothing layer (e.g., page 6, line 18 to page 7, line 6) and transparent ceramic layers (e.g., page 7, lines 17-23), and comprising the at least one smoothing layer between two transparent ceramic layers (e.g., page 7, lines 17-23), which transparent ceramic layers are applied by sputtering (e.g., page 6, lines 7-16; page 7, lines 17-23), and a monomer is admitted into an evacuated coating chamber in which a magnetron plasma is operated during deposition of the at least one smoothing layer (e.g., page 7, lines 17-23).

(VI) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(a) Claims 1, 2, 5-7, 9-14, 17, 19-21 and 23-26 are rejected under 35 U.S.C. 102(a) [apparently should be 102(b)] as being anticipated by U.S. Patent No. 6,613,393 to Rauschnabel (and hereinafter “Rauschnabel-US”).

(b) Claims 1, 2, 5-7, 9-14, 17, 19-21 and 23-26 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/63129 (which is the corresponding International Application of U.S. Patent No. 6,613,3930) (and hereinafter “Rauschnabel-WO”).

(c) Claims 3, 4, 8, 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of WO 03/048406 A2 to Landgraf et al. (hereinafter “Landgraf-WO”) with US 2005/0040034 A1 being used as English translation (hereinafter “Landgraf-US”).

(d) Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of U.S. Patent No. 5,464,710 to Yang (hereinafter “Yang”).

(e) Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of U.S. Patent No. 4,715,319 to Bringmann et al. (hereinafter “Bringmann”).

(f) Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of U.S. Patent No. 4,619,865 to Keem et al. (hereinafter “Keem”).

(VII) ARGUMENT**(I) Traversal of rejection of claims 1, 2, 5-7, 9-14, 17, 19-21 and 23-26 under 35**

U.S.C. 102(a) as being anticipated by Rauschnabel-US.

(a) Claims 1, 2, 5-7, 9-14, 17, 19-21 and 23-26 are not properly rejected under 35

U.S.C. 102(a) as being anticipated by Rauschnabel-US.

(A) Arguments for Independent Claim 1 and Dependent claims 5, 14 and 17

The rejection of independent claim 1 and dependent claims 5, 14 and 17 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Appellant's independent claim 1 is directed to a method for producing an ultrabarrier layer system comprising vacuum coating on a substrate a layer stack comprising an alternating layer system of at least one smoothing layer and transparent ceramic layers, and comprising the at least one smoothing layer between two transparent ceramic layers, which transparent ceramic layers are applied by sputtering, and a monomer is admitted into an evacuated coating chamber in which a magnetron plasma is operated during deposition of the at least one smoothing layer.

Appellant submits that Rauschnabel-US does not teach each and every feature recited in Appellant's claim 1 so as to constitute anticipation, especially because Rauschnabel-US does not disclose a method of producing an ultrabarrier layer system to which Appellant's independent claim 1 is directed. An ultrabarrier layer system is defined in Appellant's originally filed application in the fourth paragraph on page 1 of Appellant's originally filed specification as:

Within the meaning of the invention, ultrabarrier layers are understood to be layers, the barrier effect of which prevents permeation values of WVTR = 0.05 g/m²d and OTR = 0.2 cm³/m²d from being exceeded (WVTR according to DIN 53122-2-A; OTR according to DIN 53380-3).

In contrast, Rauschnabel-US is not directed to a method for producing an ultrabarrier layer system. Rauschnabel-US is directed to a method for applying wear protection layer system having optical properties onto surfaces. While Rauschnabel-US discloses within his disclosure certain materials that can be used in Appellant's ultrabarrier layer system, the rejection does not point to any disclosure in Rauschnabel-US that would inherently provide a method of producing an ultrabarrier layer let alone the ultrabarrier layer system as recited in Appellant's claims.

In order for inherency to be present, the Examiner has the burden of showing that the result indicated by the Examiner is the necessary result, and not merely a possible result. In re Oelrich, 212 U.S.P.Q. 323 (CCPA 1981); Ex parte Keith et al., 154 U.S.P.Q. 320 (POBA 1966). For example, the fact that a prior art article may inherently have the characteristics of the claimed product is not sufficient. Ex parte Skinner, 2 U.S.P.Q.2d 1788 (BPAI 1986). In other words, the rejection must establish that Appellant's method of producing an ultrabarrier layer system is either explicitly or inherently disclosed in the Rauschnabel-US.

As the Board of Patent Appeals and Interferences states in Ex parte Levy, 17 U.S.P.Q.2d 1461, 1463 (Bd. Pat. App. & Inter. 1990):

However, the initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention rests upon the examiner. In re Piasecki, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984). In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986); W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983); In re Oelrich, 666 F.2d 578, 212 USPQ 323 (CCPA 1981); In re Wilding, 535 F.2d 631, 190 USPQ 59 (CCPA 1976); Hansgirg v. Kemmer, 102 F.2d 212, 40 USPQ 665 (CCPA 1939). In order for inherency to be present it must be a necessary result, and not merely a possible result. Ex parte Keith and Turnquest, 154 U.S.P.Q. 320 (B.O.A. 1966).

Accordingly, the rejection must establish that the method for applying a wear protective layer system of Rauschnabel-US would either explicitly or inherently produce an ultrabarrier layer system as recited in Appellant's independent claim 1.

However, the rejection does not point to any disclosed embodiment of Rauschnabel-US that anticipates Appellant's recited method for producing an ultrabarrier layer system. If the rejection is relying upon the embodiment of Fig. 2 of Rauschnabel-US, this embodiment only discloses layers 22 made of sputtered metal compound and polysiloxane layers 21 with a substrate 20. There is no teaching or suggestion in Rauschnabel-US that any of these layers be applied in any manner to produce an ultrabarrier layer system let alone to arrive at Appellant's recited method of producing an ultrabarrier layer system.

Still further, the following arguments are also pertinent to the rejection of independent claim 1.

Ultrabarrier layer system

The rejection contends that Rauschnabel-US teaches a method for producing an ultrabarrier layer system. In contrast, Rauschnabel-US is directed to methods for producing **wear protection** layers and the resulting layer systems. For example, the title of Rauschnabel-US is "Method for Applying a Wear Protection Layer System Having Optical Properties Onto Surfaces". As noted above, a wear protection layer is not inherently a barrier layer, and a barrier layer is not inherently a wear protection layer. The requirements for a wear protection layer are different from the requirements for a barrier layer. Consequently, the properties of a wear protection layer are different from the properties of a barrier layer. The rejection improperly

does not address that Rauschnabel-US discloses producing a wear protection layer and does not disclose producing an ultrabarrier layer system as recited by Appellant.

Differences of the two layers are readily apparent for one having ordinary skill in the art. For example, important requirements for a wear protection layer are high scratch resistance and low abrasion. The problem for a wear resistant layer is to find a useful compromise between high hardness and high flexibility of the layer. In contrast, the most important requirement for a barrier layer is a low permeation of oxygen and water vapor, as seen, for example, the above-noted third full paragraph on page 1 of Appellant's specification. Consequently, the requirement for a good barrier is to find a layer or a layer structure with a low defect density. In fact, requirements for an ultrabarrier layer or ultrabarrier layer system are high, and are specified within the meaning of Appellant's invention in the fourth full paragraph on page 1 of Appellant's specification.

There does not appear to be any disclosure in Rauschnabel-US, either explicitly or implicitly, of producing an ultrabarrier layer system, including any indication that the layers or layer systems of Rauschnabel-US have a permeation barrier against oxygen and water vapor to constitute the producing of an ultrabarrier layer system as recited by Appellant. Thus, Rauschnabel-US is without any teaching or suggestion to arrive at a method of producing an ultrabarrier layer system let alone the method recited in Appellant's independent claim 1.

Ceramic layer

Rauschnabel-US discloses at column 3, line 60 to column 4, line 15, the depositing of a wide range of layer materials (such as oxides, silicides, carbides, borides, nitrides, sulfides, fluorides, selenides, tellurides ...) by sputtering to realize an UV protective layer. However, Rauschnabel-US does not appear to disclose the deposition of at least two transparent **ceramic**

layers by sputtering to obtain an ultrabarrier layer system. Accordingly, the rejection is without appropriate basis for this additional reason.

Transparent layer

Appellant's independent claim 1 also includes, amongst the other recitations included therein, at least two transparent ceramic layers, which transparent layers are applied by sputtering. In the range of materials disclosed in Rauschnabel-US for the deposition by sputtering it is possible to retain at least silver, golden, yellow, red and green layers. It does not appear that Rauschnabel-US discloses at least two **transparent** ceramic layers by sputtering in an ultrabarrier layer system. **The rejections of record do not address this apparent deficiency of Rauschnabel-US.** Accordingly, the rejection is without appropriate basis for this additional reason.

Smoothing layer

Appellant's independent claim 1 further includes an alternating layer system of at least one smoothing layer and transparent ceramic layers, and comprising at least one smoothing layer between two transparent ceramic layers, which transparent layers are applied by sputtering, and a monomer is admitted into an evacuated coating chamber in which a magnetron plasma is operated during deposition of the at least one smoothing layer. For example, attention is directed to Appellant's specification to the paragraph beginning on page 6 and continuing thereafter. Such a smoothing layer prevents the growth of defects in the ceramic layers from continuing over several layers.

The only kinds of layers disclosed in Rauschnabel-US are UV protective layers and wear protective layers. It does not appear that Rauschnabel-US discloses that any of these layers is structured and/or arranged to prevent growth of defects in a ceramic layer from continuing over several layers and therefore **does not teach or suggest Appellant's recited smoothing layer**. Consequently, it does not appear that Rauschnabel-US teaches or suggests a method of producing an ultrabarrier layer system comprising smoothing layers. Accordingly, the rejection is without appropriate basis for this additional reason.

Additionally, Appellant's independent claim 1 further recites that a monomer is admitted into an evacuated coating chamber in which a magnetron plasma is operated during deposition of the at least one smoothing layer.

Still further, the at least one smoothing layer is deposited under the influence of a **magnetron plasma**. For building a magnetron plasma a low pressure level in a vacuum chamber is required. In contrast, Rauschnabel-US discloses two kinds of layer systems for wear protection and two different apparatus for the deposition of the two kinds of layer systems.

A first layer structure is shown in Fig. 1 of Rauschnabel-US. This layer structure includes a single wear protection layer 11 which includes sputtered particles 12, with Rauschnabel-US disclosing, at column 6, lines 21-22 (bolded emphasis added), "...having a layer structure in the case of simultaneous operation of the sputtering and **microwave sources**." An apparatus for the deposition of such a single layer is shown in Fig. 3. This apparatus includes a reaction chamber 36 in which simultaneously is sputtered a target 35 for the particles 12 in layer 11 and a silicon monomer (fed by supply line 37 into chamber 36) and is activated by a **microwave plasma** and forms most of layer 11 by a CVD process. Therefore, Rauschnabel-US discloses a microwave plasma in chamber 36 and not a magnetron plasma. See, for example,

Rauschnabel-US, column 6, lines 62 – 64 (with bolded emphasis added), “**A microwave generator 33 that generates the plasma** is mounted in the vicinity of the substrate”.

A second layer structure is shown in Fig. 2 of Rauschnabel-US. This is a multilayer structure where wear protective layers 21 and UV protective layers 22 alternate. An apparatus for the deposition of such a layer system is shown in Figs. 4 and 5 of Rauschnabel-US. This is a multi-chamber facility and comprises four chambers which are separated from each other. Two chambers comprise PECVD facilities for the deposition of the layers 21 and two chambers comprise sputter systems for the deposition of the layers 22.

It is not possible to deposit the single mixed layer 11 from Fig. 1 with an apparatus shown in Fig. 4 and 5 because of the separated chambers; and it is not possible to deposit a layer system from Fig. 2 with an apparatus shown in Fig. 3 because the sputtering of a layer which consists only of sputtered particles (like layers 22) requires a low pressure level in the chamber and the deposition of a layer as an result of a microwave plasma enhanced CVD process (like layers 21) requires a high pressure level in the chamber. It is not possible to switch the different pressure levels in chamber 36 for the deposition of the different layers in the required time to deposit such a layer system.

Regarding dependent claims 5, 14 and 17, these claims are patentable at least for the reasons set forth with respect to independent claim 1 above. Furthermore, these claims are patentable as the combination of process steps is not taught or suggested in Rauschnabel-US.

Accordingly, the rejection is without appropriate basis for the above reasons in that Rauschnabel-US does not teach or suggest the various features recited in the claims so that each and every features of the claims is not disclosed in Rauschnabel-US, and should be withdrawn.

(B) Arguments for Dependent Claim 2

The rejection of dependent claim 2 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 2 further patentably defines independent claim 1 by reciting wherein, during the deposition of the at least one smoothing layer, the magnetron plasma is operated in a pulsed manner with a pulse frequency of 1 kHz to 300 kHz. Therefore, claim 2 is patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

Rauschnabel-US does not disclose a magnetron plasma operated in a pulsed manner with a pulse frequency of 1 kHz to 300 kHz. In this regard, Appellant points out that the citation of Rauschnabel-US referenced in the rejection, i.e., column 2, lines 21-42 of Rauschnabel-US, relates to a microwave plasma and not to a magnetron plasma.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(C) Arguments for Dependent Claim 6

The rejection of dependent claim 6 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 6 further patentably defines independent claim 1 by reciting wherein hydrocarbons, silanes, Si-organics or organometallics are admitted as monomers.

Therefore, claim 6 is patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

The rejection relies upon Rauschnabel-US at column 2, lines 1-20. However, Rauschnabel-US does not disclose a monomer being admitted into an evacuated coating chamber in which a magnetron plasma is operated during deposition of the at least one smoothing layer. Therefore, Rauschnabel-US does not disclose hydrocarbons, silanes, Si-organics or organometallics being admitted as monomers during deposition of the at least one smoothing layer.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(D) Arguments for Dependent Claim 7

The rejection of dependent claim 7 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 7 further patentably defines independent claim 1 by reciting wherein at least one of oxygen, nitrogen and hydrogen is admitted as reactive gas in addition to the admission of monomers during the deposition of the at least one smoothing layer. Therefore, claim 7 is patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

The rejection relies upon Rauschnabel-US at column 2, lines 49-45. However, Rauschnabel-US does not disclose a monomer being admitted into an evacuated coating chamber in which a magnetron plasma is operated during deposition of the at least one smoothing layer.

Therefore, Rauschnabel-US does not disclose at least one of oxygen, nitrogen and hydrogen is admitted as reactive gas in addition to the admission of monomers during the deposition of the at least one smoothing layer.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(E) Arguments for Dependent Claims 9 and 10

The rejection of dependent claims 9 and 10 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 9 further patentably defines independent claim 1 by reciting wherein the deposition of the transparent ceramic layers takes place through magnetron sputtering. Moreover, dependent claim 10 further patentably defines dependent claim 9 by reciting wherein the deposition of the transparent ceramic layers takes place through reactive magnetron sputtering, and at least one of nitrogen, oxygen, and hydrogen is admitted as reactive gas. Therefore, claims 9 and 10 are patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

Rauschnabel-US does not disclose transparent ceramic layers, does not disclose transparent ceramic layers in an ultrabarrier layer system, and does not disclose transparent ceramic layers applied by magnetron sputtering as recited in dependent claims 9 and 10.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(F) Arguments for Dependent Claim 11

The rejection of dependent claim 11 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 11 further patentably defines independent claim 1 by reciting wherein Al_2O_3 is deposited as a transparent ceramic layer. Therefore, claim 11 is patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

Rauschnabel-US does not disclose transparent ceramic layers, does not disclose transparent ceramic layers in an ultrabarrier layer system, and does not appear to disclose depositing Al_2O_3 as a transparent ceramic layer.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(G) Arguments for Dependent Claim 12

The rejection of dependent claim 12 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 12 further patentably defines independent claim 1 by reciting wherein SiO_2 is deposited as a transparent ceramic layer. Therefore, claim 12 is patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

Rauschnabel-US does not disclose transparent ceramic layers, does not disclose transparent ceramic layers in an ultrabarrier layer system, and does not appear to disclose depositing SiO₂ as a transparent ceramic layer.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(H) Arguments for Dependent Claim 13

The rejection of dependent claim 13 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 13 further patentably defines independent claim 1 by reciting wherein SiN is deposited as a transparent ceramic layer. Therefore, claim 13 is patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

Rauschnabel-US does not disclose transparent ceramic layers, does not disclose transparent ceramic layers in an ultrabarrier layer system, and does not appear to disclose depositing SiN as a transparent ceramic layer.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(I) Arguments for Dependent Claim 19

The rejection of dependent claim 19 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 19 further patentably defines independent claim 1 by reciting wherein the alternating layer system is deposited by a magnetron arrangement in the plasma of which alternately a monomer and a reactive gas is admitted. Therefore, claim 19 is patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

Rauschnabel-US at column 4, lines 21-28 discloses only gases which can be in a chamber during sputtering. Nowhere does Rauschnabel-US disclose alternating inlet of two gases in a chamber during sputtering. The rejection relies upon a combination of Figs. 2 and 3. However, these embodiments do not appear to be combinable. Rauschnabel-US does not disclose depositing alternating layers in a single chamber, and it does not appear to be possible to deposit the layer system of Fig. 2 of Rauschnabel-US with the apparatus of Fig. 3.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(J) Arguments for Dependent Claim 20 and 21

The rejection of dependent claims 20 and 21 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 20 further patentably defines dependent claim 19 by reciting wherein the deposition of the alternating layer system takes place through alternating admission of HMDSO and oxygen; and dependent claim 21 further patentably defines dependent claim 19 wherein, during the deposition of the alternating layer system, flows of monomer and reactive gas and/or working gas admitted are gradually changed and at least at times occur simultaneously so that individual layers of the alternating layer system merge into one another in a gradient form. Therefore, dependent claims 20 and 21 are patentable for at least the reasons set forth with respect to independent claim 1 and dependent claim 19, and for the additional reasons set forth herein.

HMDSO in Rauschnabel-US (Column 2 lines 14 – 15) relates only to plasma polymerization and not to magnetron sputtering. See Rauschnabel (Column 2 lines 2 – 20).

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(K) Arguments for Dependent Claims 23, 24, 25 and 26

The rejection of dependent claims 23, 24, 25 and 26 under 35 U.S.C. 102(a) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Appellant's dependent claim 23 further patentably defines independent claim 1 by reciting wherein the alternating layer system is deposited by at least one magnetron arrangement and admission of monomer and reactive gas and/or working gas takes place at different sites so that the layers of the alternating layer system are deposited successively when passing through a coating region on a moving substrate. Dependent claim 24 further patentably define independent claim 1 by reciting wherein the alternating layer system is deposited by at least one magnetron arrangement and admission of monomer and reactive gas and/or working gas takes place at different sites so that a clear partial pressure gradient between the admitted gases develops in the region of the magnetron plasma such that when passing through the coating region on a moving substrate layers are successively deposited which merge into one another in a gradient form. Dependent claim 25 further patentably defines dependent claim 23 by reciting wherein the substrate comprises a moving substrate guided through the coating region several times. Dependent claim 26 further patentably defines dependent claim 23 by reciting wherein the deposition of the alternating layer system takes place through the simultaneous admission of HMDSO and oxygen. Therefore, dependent claims 23-26 are patentable for at least the reasons set forth with respect to independent claim 1, and for the additional reasons set forth herein.

Rauschnabel-US does not disclose production of an alternating layer ultrabarrier layer system as recited in Appellant's claims, and does not disclosure the features of these claims for achieving the ultrabarrier layer system.

Accordingly, the rejection of record is without appropriate basis and should be withdrawn.

(II) Traversal of rejection of claims 1, 2, 5-7, 9-14, 17, 19-21 and 23-26 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO.

(a) Claims 1, 2, 5-7, 9-14, 17, 19-21 and 23-26 are not properly rejected under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO.

(A) Arguments for Independent Claim 1 and Dependent claims 5, 14 and 17

The rejection of independent claim 1 and dependent claims 5, 14 and 17 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-US is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claims 1, 5, 14 and 17 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(B) Arguments for Dependent Claim 2

The rejection of dependent claim 2 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claim 2 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(C) Arguments for Dependent Claim 6

The rejection of dependent claim 6 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claim 6 above, for the sake of

brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(D) Arguments for Dependent Claim 7

The rejection of dependent claim 7 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claim 7 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(E) *Arguments for Dependent Claims 9 and 10*

The rejection of dependent claims 9 and 10 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claims 9 and 10 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(F) *Arguments for Dependent Claim 11*

The rejection of dependent claim 11 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claim 11 above, for the sake

of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(G) Arguments for Dependent Claim 12

The rejection of dependent claim 12 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claim 12 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(H) Arguments for Dependent Claim 13

The rejection of dependent claim 13 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the

same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claim 13 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(I) Arguments for Dependent Claim 19

The rejection of dependent claim 19 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claim 19 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(J) Arguments for Dependent Claim 20 and 21

The rejection of dependent claims 20 and 21 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject this claim should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claims 20 and 21 above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(K) Arguments for Dependent Claims 23, 24, 25 and 26

The rejection of dependent claims 23, 24, 25 and 26 under 35 U.S.C. 102(b) as being anticipated by Rauschnabel-WO is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Rauschnabel-WO is the publication of International Application No. PCT/DE99/01326 of which Rauschnabel-US is the U.S. national stage. Accordingly, these two documents have the same disclosure. In fact, the rejection uses Rauschnabel-US for translational purposes in the rejection based upon Rauschnabel-WO. Therefore, as the same disclosure is being used for this rejection for which arguments have been presented with respect to claims 23, 24, 25 and 26

above, for the sake of brevity these arguments in the corresponding rejection based upon Rauschnabel-US are incorporated by reference herein as if set forth in their entirety and are not being repeated.

Accordingly, the rejection is without appropriate basis for the reasons set forth above with respect to Rauschnabel-US, and the rejection should be withdrawn.

(III) Traversal of rejection of claims 3, 4, 8, 22 and 27 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Landgraf-WO (Landgraf-US being used as English translation).

(a) Claims 3, 4, 8, 22 and 27 are not properly rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Landgraf-WO (Landgraf-US being used as English translation).

(A) Arguments for Dependent claims 3, 4 and 8

The rejection of dependent claims 3, 4 and 8 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Landgraf-WO is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Dependent claim 3 further patentably defines independent claim 1 by reciting wherein, to maintain the magnetron plasma during the deposition of the at least one smoothing layer, a magnetron is used that is equipped with a target that is made of a material that can be reactively converted with nitrogen or oxygen. Dependent claim 4 further patentably defines independent claim 1 by reciting wherein a double magnetron is used to maintain the plasma during the deposition of the at least one smoothing layer. Moreover, dependent claim 8 further patentably

defines independent claim 1 by reciting wherein a process pressure of 0.1 Pa to 10 Pa is set during the deposition of the at least one smoothing layer.

Accordingly, each of these claims further patentably defines the deposition of the at least one smoothing layer of Appellant's claimed method. As set forth above in arguing against the rejection of independent claim 1, neither of Rauschnabel-US or Rauschnabel-WO appears to disclose that any layer is structured and/or arranged to prevent growth of defects in a ceramic layer from continuing over several layers and therefore **does not teach or suggest Appellant's recited smoothing layer.** In this regard, Rauschnabel-US and Rauschnabel-WO do not appear to teach or suggest a method of producing an ultrabarrier layer system comprising smoothing layers. Accordingly, for at least this reason, the rejections of claims 3, 4 and 8 is without appropriate basis and should be withdrawn.

Landgraf-WO is merely used in these rejections in an attempt to establish obviousness of the subject matter recited in the dependent claims. However, whether or not one having ordinary skill in the art would have combined the disclosures of Rauschnabel-US or Rauschnabel-WO and Landgraf-WO, which Appellant submits would not be combinable in view of the specific embodiments disclosed by Rauschnabel-US and Rauschnabel-WO, Appellant's claimed subject matter would not be at hand at least because any such combination would not include forming an ultrabarrier layer system with at least one smoothing layer, and modifying Rauschnabel-US or Rauschnabel-WO to necessarily obtain an ultrabarrier layer system including at least one smoothing layer.

Accordingly, the rejections are without appropriate basis for the reasons set forth above, and the rejections should be withdrawn.

(B) Arguments for Dependent claims 22 and 27

The rejections of dependent claims 22 and 27 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Landgraf-WO is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Dependent claim 22 further patentably defines dependent claim 19 by reciting wherein reactive gas and monomer are admitted via a common gas intake, and dependent claim 27 further patentably defines dependent claim 23 by reciting wherein reactive gas and monomer are admitted via a common gas intake.

These claims are patentable at least for the reasons set forth above in that Rauschnabel-US and Rauschnabel-WO do not appear to teach or suggest a method of producing an ultrabarrier layer system as recited Appellant's independent claim 1. Accordingly, for at least this reason, the rejections of claims 22 and 27 is without appropriate basis and should be withdrawn.

Landgraf-WO is merely used in these rejections in an attempt to establish obviousness of the subject matter recited in the dependent claims. However, whether or not one having ordinary skill in the art would have combined the disclosures of Rauschnabel-US or Rauschnabel-WO and Landgraf-WO, which Appellant submits would not be combinable in view of the specific embodiments disclosed by Rauschnabel-US and Rauschnabel-WO, Appellant's claimed subject matter would not be at hand at least because any such combination would not include forming an ultrabarrier layer system, and modifying Rauschnabel-US or Rauschnabel-WO to necessarily obtain an ultrabarrier layer system. Nowhere does Rauschnabel-US or Rauschnabel disclose alternating inlet of two gases in a chamber during sputtering. As noted above, the rejection relies

upon a combination of Figs. 2 and 3. However, these embodiments do not appear to be combinable. Rauschnabel-US or Rauschnabel-WO does not disclose depositing alternating layers in a single chamber, and it does not appear to be possible to deposit the layer system of Fig. 2 of Rauschnabel-US with the apparatus of Fig. 3. Accordingly, Landgraf-WO does not overcome the deficiencies of Rauschnabel-US or Rauschnabel-WO as it does not overcome the deficiencies of Rauschnabel-US or Rauschnabel-WO with respect to their failure to teach or suggest or method of producing an ultrabarrier layer system.

Accordingly, the rejections are without appropriate basis for the reasons set forth above, and the rejections should be withdrawn.

(IV) Traversal of rejection of claim 15 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Yang.

(a) Claim 15 is not properly rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Yang.

(A) Arguments for Dependent claim 15

The rejection of dependent claim 15 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Yang is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Dependent claim 15 further patentably defines independent claim 1 by reciting wherein the coating is performed on moving band-shaped substrates.

As set forth above, Rauschnabel-US and Rauschnabel-WO do not appear to teach or suggest a method of producing an ultrabarrier layer system. Accordingly, for at least this reason, the rejection of claim 15 is without appropriate basis and should be withdrawn.

Yang is merely used in this rejection in an attempt to establish obviousness of coating a web with a monomer. However, whether or not one having ordinary skill in the art would have combined the disclosures of Rauschnabel and Yang, Appellant's claimed subject matter would not be at hand at least because any such combination would not include forming an ultrabarrier layer system as recited in Appellant's claim 15.

Accordingly, the rejection is without appropriate basis for the reasons set forth above, and the rejection should be withdrawn.

(V) Traversal of rejection of claim 16 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Bringmann.

(a) Claim 16 is not properly rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Bringmann.

(A) Arguments for Dependent claim 16

The rejection of dependent claim 16 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Bringmann is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Dependent claim 16 further patentably defines independent claim 1 by reciting wherein the substrate temperature is kept at below 200°C during the coating.

As set forth above, Rauschnabel-US and Rauschnabel-WO do not appear to teach or suggest a method of producing an ultrabarrier layer system. Accordingly, for at least this reason, the rejection of claim 16 is without appropriate basis and should be withdrawn.

Bringmann is merely used in this rejection for its disclosure of keeping the substrate at 35°C during the coating process. However, whether or not one having ordinary skill in the art would have combined the disclosures of Rauschnabel and Bringmann, Appellant's claimed subject matter would not be at hand at least because any such combination would not include forming an ultrabarrier layer system as recited in Appellant's claim 16.

Accordingly, the rejection is without appropriate basis for the reasons set forth above, and the rejection should be withdrawn.

(VI) Traversal of rejection of claim 18 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Keem.

(a) Claim 18 is not properly rejected under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Keem.

(A) Arguments for Dependent claim 18

The rejection of dependent claim 18 under 35 U.S.C. 103(a) as being unpatentable over Rauschnabel-US or Rauschnabel-WO in view of Keem is in error, the decision of the Examiner to reject these claims should be reversed, and the application should be remanded to the Examiner.

Dependent claim 15 further patentably defines independent claim 1 by reciting wherein at least one of coating rates and substrate speed is adjusted such that plasma polymer layers are

deposited as smoothing layers with a layer thickness of 50 nm to 5 μ m and transparent ceramic layers are deposited with a layer thickness of 5 nm to 500 nm.

As set forth above, Rauschnabel-US and Rauschnabel-WO do not appear to teach or suggest a method of producing an ultrabarrier layer system. Accordingly, for at least this reason, the rejection of claim 15 is without appropriate basis and should be withdrawn.

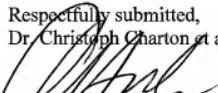
Keem is merely used in this rejection for its disclosure that layers should range from 50 Angstroms to 5,000 Angstroms. However, whether or not one having ordinary skill in the art would have combined the disclosures of Rauschnabel and Keem, Appellant's claimed subject matter would not be at hand at least because any such combination would not include forming an ultrabarrier layer system as recited in Appellant's claim 18.

Accordingly, the rejection is without appropriate basis for the reasons set forth above, and the rejection should be withdrawn.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that the Examiner has failed to establish that each and every feature recited in Appellant's claims is disclosed in the prior art and has failed to establish that a *prima facie* case of obviousness, which are prerequisites for maintaining rejections under 35 U.S.C. 102(a)(b) or 35 U.S.C. 103(a). The Board is, therefore, respectfully requested to reverse the Final Rejection, and to allow the application to issue in its present form.

Respectfully submitted,
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Attachments: (VIII) Claims Appendix
(IX) Evidence Appendix
(X) Related Proceedings Appendix

(VIII) CLAIMS APPENDIX**CLAIMS ON APPEAL**

1. Method for producing an ultrabarrier layer system comprising vacuum coating on a substrate a layer stack comprising an alternating layer system of at least one smoothing layer and transparent ceramic layers, and comprising the at least one smoothing layer between two transparent ceramic layers, which transparent ceramic layers are applied by sputtering, and a monomer is admitted into an evacuated coating chamber in which a magnetron plasma is operated during deposition of the at least one smoothing layer.
2. Method according to claim 1, wherein, during the deposition of the at least one smoothing layer, the magnetron plasma is operated in a pulsed manner with a pulse frequency of 1 kHz to 300 kHz.
3. Method according to claim 1, wherein, to maintain the magnetron plasma during the deposition of the at least one smoothing layer, a magnetron is used that is equipped with a target that is made of a material that can be reactively converted with nitrogen or oxygen.
4. Method according to claim 1, wherein a double magnetron is used to maintain the plasma during the deposition of the at least one smoothing layer.
5. Method according to claim 1, wherein a noble gas is used as a working gas.
6. Method according to claim 1, wherein hydrocarbons, silanes, Si-organics or organometallics are admitted as monomers.
7. Method according to claim 1, wherein at least one of oxygen, nitrogen and hydrogen is admitted as reactive gas in addition to the admission of monomers during the deposition of the at least one smoothing layer.

8. Method according to claim 1, wherein a process pressure of 0.1 Pa to 10 Pa is set during the deposition of the at least one smoothing layer.

9. Method according to claim 1, wherein the deposition of the transparent ceramic layers takes place through magnetron sputtering.

10. Method according to claim 9, wherein the deposition of the transparent ceramic layers takes place through reactive magnetron sputtering, and at least one of nitrogen, oxygen, and hydrogen is admitted as reactive gas.

11. Method according to claim 1, wherein Al_2O_3 is deposited as a transparent ceramic layer.

12. Method according to claim 1, wherein SiO_2 is deposited as a transparent ceramic layer.

13. Method according to claim 1, wherein SiN is deposited as a transparent ceramic layer.

14. Method according to claim 1, wherein the coating is performed on stationary substrates.

15. Method according to claim 1, wherein the coating is performed on moving band-shaped substrates.

16. Method according to claim 1, wherein the substrate temperature is kept at below 200°C during the coating.

17. Method according to claim 1, wherein the coating is performed on plastic substrates.

18. Method according to claim 1, wherein at least one of coating rates and substrate speed is adjusted such that plasma polymer layers are deposited as smoothing layers with a layer thickness of 50 nm to 5 μ m and transparent ceramic layers are deposited with a layer thickness of 5 nm to 500 nm.

19. Method according to claim 1, wherein the alternating layer system is deposited by a magnetron arrangement in the plasma of which alternately a monomer and a reactive gas is admitted.

20. Method according to claim 19, wherein the deposition of the alternating layer system takes place through alternating admission of HMDSO and oxygen.

21. Method according to claim 19, wherein, during the deposition of the alternating layer system, flows of monomer and reactive gas and/or working gas admitted are gradually changed and at least at times occur simultaneously so that individual layers of the alternating layer system merge into one another in a gradient form.

22. Method according to claim 19, wherein reactive gas and monomer are admitted via a common gas intake.

23. Method according to claim 1, wherein the alternating layer system is deposited by at least one magnetron arrangement and admission of monomer and reactive gas and/or working gas takes place at different sites so that the layers of the alternating layer system are deposited successively when passing through a coating region on a moving substrate.

24. Method according to claim 1, wherein the alternating layer system is deposited by at least one magnetron arrangement and admission of monomer and reactive gas and/or working gas takes place at different sites so that a clear partial pressure gradient between the admitted gases develops in the region of the magnetron plasma such that when passing through the coating

region on a moving substrate layers are successively deposited which merge into one another in a gradient form.

25. Method according to claim 23, wherein the substrate comprises a moving substrate guided through the coating region several times.

26. Method according to claim 23, wherein the deposition of the alternating layer system takes place through the simultaneous admission of HMDSO and oxygen.

27. Method according to claim 23, wherein reactive gas and working gas are admitted via a common gas intake.

(IX) Evidence Appendix

Copies of evidence entered by the Examiner and relied upon by Appellant in the appeal along with statements setting from where in the record that evidence was entered in the record by the Examiner.

(a) U.S. Patent No. 6,613,393 to Rauschnabel-US - entered in the record in Form PTO-892 attached to the 1449 attached to Final Office Action mailed February 25, 2010.

(b) WO 99/63129 to Rauschnabel-WO – entered in the record in Form PTO-892 attached to the 1449 attached to Final Office Action mailed February 25, 2010.

(c) WO 03/048406 A2 to Landgraf-US – entered in the record in Form PTO-892 attached to the 1449 attached to Final Office Action mailed February 25, 2010.

(d) US 2005/0040034 A1 to Landgraf-US – entered in the record in Form PTO-892 attached to the 1449 attached to Final Office Action mailed February 25, 2010.

(e) U.S. Patent No. 5,464,710 to Yang – entered in the record in Form PTO-892 attached to the 1449 attached to Final Office Action mailed February 25, 2010.

(f) U.S. Patent No. 4,715,319 to Bringmann – entered in the record in Form PTO-892 attached to the 1449 attached to Final Office Action mailed February 25, 2010.

(g) U.S. Patent No. 4,619,865 to Keem – entered in the record in Form PTO-892 attached to the 1449 attached to Final Office Action mailed February 25, 2010.

(X) Related Proceedings Appendix

None